

TOP SECRET

ATTACHMENT B
TS #141842-b

COORDINATED INTELLIGENCE

ASSUMPTIONS

FOR NESC EXERCISE, 1958-1959

THE PROBLEM

To provide, for the special-purpose use of the Net Evaluation Subcommittee, coordinated intelligence assumptions with respect to certain Soviet military capabilities and US warning capabilities in mid-1962, as set forth by the NESC in an "Outline of Specific Coordinated Intelligence Required for NESC Exercise, 1958-1959."

FOREWORD

1. In preparing these coordinated assumptions, it has been recognized that for its purposes the NESC requires quite specific numerical projections for the mid-1962 period. The views of individual agencies have in some cases been compromised in an effort to meet this requirement. Likewise, numerical projections have been made in some areas where the present state of our knowledge might not justify their inclusion as estimates in an NIE for general distribution.

TOP SECRET

TOP SECRET

ATTACHMENT B
to TS # 141842-b

2. In instances where this has occurred, every effort has been made to provide assumptions which are as realistic as possible. For example, Soviet requirements for guided missiles of various categories were derived in accordance with estimated Soviet military thinking and strategy (as outline in NIE 11-4-57), and in the light of available studies of US and Allied targets, data on weapon effects, estimated availability of other Soviet weapon systems, and other pertinent factors. Production of missiles and associated equipment was then scheduled and the schedules were checked and adjusted in the light of known or estimated Soviet capabilities and programs in the guided missile and other military fields. The final assumptions for mid-1962 were measured against estimated Soviet economic capabilities and estimated availability of nuclear materials for warheads, and found to be feasible.*

* The representative of the Director of Naval Intelligence calls attention to his dissent to the majority estimate of the availability of nuclear materials in the USSR, as registered in NIE 11-2-58. In accordance with this dissent, he believes that the assumed numbers of weapons whose accuracies, payloads, or missions would require the use of nuclear warheads are excessive.

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SECRET

ATTACHMENT B
to TS#141842-1

3 This procedure has been undertaken under the broad assumptions that:

-- there will be no international agreement on the limitation of control of armaments during this period;

-- the USSR is not and will not during the period of this estimate be preparing for general war to begin at any particular date in the future (i.e., that the date 1962 has no special significance in Soviet planning);

-- Soviet requirements for weapon systems will in general be related to the missions to be performed and targets to be attacked and defended in the event of general war;

... Soviet programs for production and operational deployment of weapon systems will be affected by considerations of maximum utilization of proven military hardware, optimum effectiveness vs. cost, minimum loss or wastage due to obsolescence factors, and maximum efficiency in the utilization of available resources.

4. In sum, we believe that the Coordinated Intelligence Assumptions contained in the following pages are feasible and reasonable, but it is emphasized that they must be treated as assumptions rather than as estimates of Soviet strengths in mid-1962.

TOP SECRET

ATTACHMENT B
to TS #141842-b

THE ASSUMPTIONS

A. SOVIET NUCLEAR DELIVERY VEHICLES IN MID-1962

1. Numbers of Delivery Vehicles in Soviet Operational Units

Heavy Bombers/Tankers

Number: 200-300

Composition by type: DISONS, DEARS, new heavy bombers
(see SNIE 11-7-58).

Medium Bombers/Tankers

Piston: None

Jet: 1,350

Composition by role and type:

- (a) Long Range Aviation - 725 BADGERS
 - 175 Supersonic "dash" medium bombers
- (b) Naval Aviation - 250 BADGERS
- (c) Tactical Aviation - 200 BADGERS

TOP SECRET

ATTACHMENT B
to TS 3141842-b

Jet Light Bombers

Number: 2,350

Composition by role and type:

- (a) Tactical Aviation - 1,300 BEAGLES
750 Supersonic tactical bombers
- (b) Naval Aviation - 100 BEAGLES
200 Supersonic tactical bombers

Air-to-surface Missiles

AS-1, 55 n.m. missiles: 450

AS-2, 100 n.m. missiles: 350

ICBMs

Number: *Alm 500* *

Deployment:

- (a) 50 percent static sites hardened to withstand average of 25-50 psi overpressure; 50 percent rail-transportable system with minimum of two launching points per missile.
- (b) launching facilities sufficient to salvo 250-300 missiles

Other Ground-launched Ballistic Missiles**

SS-4, 700 n.m. missiles: 250-350

SS-5, 1100 n.m. missiles: 250-350

Deployment: road and rail mobile, with four missiles per launcher.

* Joint Staff and Air Force representatives reserve their positions. The representative for Intelligence, The Joint Staff believes that the assumed number of ICBMs should be 500, with references to NIE 11-5-58, paragraph 91, for discussion.

TOP SECRET

ATTACHMENT B
to TS #141842-b

Guided Missile Submarines

Number equipped with cruise-type missiles: 47

- (a) Current long-range classes, principally "Z" class, converted for topside missile stowage - 20
Missile capacity - 2 each
- (b) New design, conventional powered, constructed for internal missile stowage - 20
Missile capacity - 4 each
- (c) New design, nuclear powered, constructed for internal missile stowage - 7
Missile capacity - 4 each

Number equipped with ballistic missiles: 1 or 2

New design, nuclear powered, missile capacity 4-8 each

Submarine-launched Guided Missiles

SS-7, 200 n.m. cruise-type missiles: 300

SS-8, 1000 n.m. ballistic missiles: 10-20

2. Performance Data, Bombs, and Warheads for Above Vehicles

Aircraft characteristics: See SNIE 11-58 and SEC coordinated contribution to NIE 11-4-58

Bombs and warheads: See NIE 11-2-58 and Annex C of NIE 11-5-58.

Missile characteristics: See NIE 11-5-58

25X1A

TOP SECRET

ATTACHMENT B
to TS #141842-b

Missile reliability:

The following assumptions regarding Soviet missile reliabilities under operational conditions in mid-1962 are proposed for use by the NESC. Because of limited information available on the operational aspects of either the Soviet or US missile programs, there is considerable question as to the validity of these figures.

In the table below:

Column 1 is the missile designation.

Column 2 is the percentage of missiles organic to operational units that will appear "good enough to try" to launch at any given time, i.e., serviceability rate.

Column 3 is the percentage of those missiles considered "serviceable" (column 2) that will actually get off the launcher when fired.

Column 4 is the percentage of those missiles that get off the launcher (column 3) that will actually reach the vicinity of the target.

TOP SECRET

ATTACHMENT B
to TS #141842-b

ASSUMED RELIABILITIES OF SOVIET MISSILES, MID-1962

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
AS-1	80	90	80
AS-2	70	75	60
ICBM	75	85	65
SS-4	85	90	80
SS-5	80	90	75
SS-7	85	80	75
SS-8	70	80	50
SA-1	80	90	90
SA-2	80	90	90
SA-3	80	85	80
SA-4	80	75	75
SA-6	85	85	85
SA-7	85	80	80
AA-2	85	85	80
AA-3	85	80	80
AA-4	70	80	70

NOTES:

1. Out-of-service missiles of sub-launched, air-to-surface, and air-to-air types would not be loaded into submarines or aircraft.
2. The assumptions made for air-to-surface and air-to-air missiles do not include losses due to aircraft aborts which are caused by non-missile related items.

TOP SECRET

ATTACHMENT B
to TS #141842-b

B. SOVIET ALERT PROCEDURES IN MID-1962

1. Soviet Bomber Force

a. Assuming the continuation of present trends under normal conditions, by mid-1962 some 30-40 percent of LRA medium and heavy bomber and tanker aircraft will be engaged in flight training activities each day except on weekends and at holiday periods, and an additional 30-35 percent of LRA aircraft will be grounded for maintenance purposes each day. The remaining bombers and tankers, some 30 percent of the force, could be constituted as a continuing alert force should Soviet planners so desire. Such a force could be ready at any time to become airborne for its own protection or to take off on assigned missions. During periods of international tension, the size of such a continuing alert force could be increased by reducing the number of aircraft engaged in daily training flights and by intensifying maintenance activity. There is no present indication that the Soviets are concerned with the development of an alert force of this type.

b. Should Soviet planners elect to mount surprise air attacks after a preparatory stand-down, they might consider that a relatively

TOP SECRET

ATTACHMENT B
to TS #141842-b

brief stand-down could be concealed from detection if it occurred over a weekend, at the time of a Soviet holiday, or during unfavorable weather. About 70 percent of the LRA bomber and tanker force could be serviceable for military operations after a 2-day stand-down.

c. Should Soviet planners elect to mount maximum-scale attacks, about 85 percent of the LRA bomber and tanker force could be serviceable for military operations after a 5-day stand-down.

d. The above factors apply to jet medium bombers of Tactical and Naval Aviation as well as Long Range Aviation. They also apply to jet light bombers, with the exception that about 80 percent of the aircraft of this type could be serviceable after a 2-day stand-down.

2. Soviet Ground Forces

a. Past Soviet reactions to civil disturbances in the Satellites provide some indication of the minimum time needed to meet unexpected emergency situations. In June 1953 Soviet units in East Berlin left their barracks and moved into positions along the West Sector boundary within three hours after receiving alert orders. Elements from out-lying areas arrived on the scene within 13 hours. In October 1956 the Soviet response to the Hungarian uprising was even more rapid. Units

TOP SECRET

ATTACHMENT B
to TS #141842-b

began arriving in Budapest from locations 50 miles distant within three and one-half hours, and from locations 160 miles distant within about eight hours. Although exercises have been held regularly in recent years to test alert procedures, it is doubtful that reaction time could be significantly shortened.

b. Circumstances which are most conducive to rapid reaction occur when Soviet units have completed their summer field training and returned to winter quarters. At that time the troops are at peak effectiveness and have access to all their equipment; they probably could move into local assembly areas within two hours. At other times of the year, as many as 50 percent of Soviet units might be split between home stations and field training areas, requiring 24 hours or more to assemble with all their equipment.

3. Soviet Submarine Forces

Between now and mid-1962 the USSR will continue to improve the readiness and operational capabilities of its naval forces. Alternative assumptions can be made with respect to the precise state of readiness that might exist in mid-1962: (a) that a normal peacetime pattern of

TOP SECRET

TOP SECRET

ATTACHMENT B
to TS #141842-b

training, upkeep, overhaul and operations is being maintained; (b) that as a result of increased international tensions or deliberate Soviet decision a sharply increased state of readiness is being maintained. The latter alternative would involve the maintenance of larger numbers of ships at sea, with ships in port limited for the most part to those in upkeep or overhaul status. Many of the ships in port would have a large percentage of their crews on board and make every effort to be prepared for rapid sortie. The following conditions could apply under each of these alternate assumptions:

Assumption	Percentage of Naval Forces				
	At Sea	Underway in 6 hrs.	Underway in 12 hrs.	Towable to dispersal area in 48 hrs.	Inmovable
(a)	25	20	30	15	10
(b)	50	20	5	15	10

The above figures are generally applicable to all types of major Soviet surface vessels and submarines, and to all Soviet fleet areas.

TOP SECRET

TOP SECRET

ATTACHMENT B
to TS #141842-b

C. SOVIET AIR DEFENSES IN MID-1962

1. We have reviewed those portions of NIE 11-57 which are pertinent to the NESC's requirements, and find them generally valid, with the exception of the following points:
2. Fighter Aircraft. For revised performance data on Soviet interceptors, see SEC coordinated contribution to NIE 11-4-58. With respect to numbers of interceptors, we hold estimated Soviet operational strength constant at about 10,000 fighters through mid-1960, at which time a gradual decrease will probably begin. Soviet fighter strength in mid-1962 will probably be about 9,300 aircraft, of which over half may be all-weather types. The assumed breakdown of Bloc fighter strength by type and area is as follows:

TOP SECRET

ATTACHMENT B
to TS# 141842-bJet Fighter Aircraft in Operational Units (mid-1962)

Area	Day	All-weather	Total	Regiments
Northwestern USSR	670	720	1390	43
Western USSR	985	1070	2055	63
West Central USSR	600	900	1500	45
Caucasus	555	575	1130	35
East Central USSR	305	315	620	19
Far Eastern USSR	850	820	1670	51
Total Within USSR	3965	4400	8365	256
Soviet Forces East Europe	445	490	935	29
(Total Soviet)	(4410)	(4890)	(9300)	(285)
East European Satellites	<u>2860</u>	<u>740</u>	<u>3600</u>	<u>113</u>
Total Within East Europe	3305	1230	4535	142
Communist China and North Korea	1900	690	2590	76
TOTAL BLOC	9,170	6,320	15,490	474

TOP SECRET

TOP SECRET

ATTACHMENT B
to TS # 141842-b

3. Guided Missiles. For revised data on Soviet missile types and performance, see NIE 11-5-58. With respect to numbers of missiles, we assume that by mid-1962 the USSR will have produced sufficient missiles and associated equipment to accomplish an operational program of the following general order of magnitude:

Arbitrary Designation	Number of Missiles	Operational Units*	Deployment
SA-1	13,500	56	Moscow sites
SA-2	23,000	175	Static and mobile
SA-3	15,000	100	Static and mobile
SA-4	13,500	100	Static
SA-6	500	2 cruisers 4 destroyers	----- -----
SA-7	1,300	4 cruisers 12 destroyers	----- -----
AA-1	Fully replaced by improved missiles		
AA-2	3,000	Day and all-weather fighters	-----
AA-3 and AA-4	35,000**	All-weather fighters	-----

* SA-2, SA-3, and SA-4 units are assumed to be battalions with three or four firing units each.

** The number of AA-3 and AA-4 missiles within this total is flexible, but AA-4 will constitute the smaller percentage of the total. See

TOP SECRET

ATTACHMENT B
to TS 3#141842-b

4. Early Warning and Intercept Control. For revised performance data on Soviet early warning and GCI radars, see SEC coordinated contribution to NIE 11-4-58. At the present time radar coverage extends over the entire Soviet Bloc except for certain inland portions of central and eastern Siberia. This radar coverage is achieved with two general categories of radars, i.e., heavy or prime radars and light auxiliary sets. At the present time some 1700 radar sites are active. Some 1200 - 1500 prime radars and some 3000 of the light radars are used in various combinations in the Soviet Bloc system. By mid-1962 radar coverage will probably be complete over the Soviet Bloc. New radars of much higher quality are already beginning to appear, and by mid-1962 will be widely deployed.

5. There is evidence that, in addition to the employment of individual Soviet cruisers and destroyers [REDACTED] 25X1D Soviet minesweepers are now being adapted for use as radar picket ships for continental early warning.

6. Command and coordination. The limitation imposed by current air-ground communications equipment is probably being overcome by use of an air-ground data-link system for GCI vectoring of interceptors. We believe such equipment is in widespread use in western USSR and will be in use throughout the Bloc by mid-1962.

TOP SECRET

7. For several years the Soviets have been developing computers and other components suitable for data handling use. The use of such equipment will have a marked effect in increasing traffic-handling capabilities, reducing system reaction time, and improving coordination within the Soviet air defense system. For example, it is expected that data-handling equipment will increase the traffic capacity of each Soviet radar reporting site to at least 20 simultaneous raids. We believe that an air defense system with some semi-automatic features is being widely deployed in western USSR in association with early warning and GCI sites. This system, which is believed to be similar in concept to the US SAGE system, will be in use throughout the Bloc by mid-1962. The Soviets are introducing a new IFF system; such a system will probably be fully operational by 1960.

8. Electronic Warfare. Shipborne, land-based, and airborne equipments, suitable for jamming at frequencies in the X-Band and below, are now in operational use. A trend towards frequency diversification has been noted in Soviet radio and radar equipment, in contrast to the earlier concentration of frequencies. This trend includes the addition of L-Band frequencies and probably the use of rapidly changeable frequencies in some radars.

9. Air Facilities. It is assumed that, as a minimum, the currently-existing airfields with long, permanent-surface runways will remain available for operational employment. They are as follows:

TOP SECRET

TOP SECRET

ATTACHMENT B
to TS #141842-b

General Area	Minimum Runway Lengths' (ft)				
	9,000	8,000	7,000	6,000	5,000
USSR	20	62	30	239	51
European Satellites	7	47	38	52	0
Communist China and North Korea	<u>1</u> <u>28</u>	<u>11</u> <u>120</u>	<u>27</u> <u>95</u>	<u>72</u> <u>363</u>	<u>31</u> <u>82</u>

About 300 of these fields are currently being used for air defense operations. In addition, there are about 400 Bloc airfields with runways over 4,000 feet in length which could be utilized for fighter operations under reduced safety margins.

D. U.S. WARNING CAPABILITIES IN MID-1962

(Submitted through special channels under separate cover.)